R20 Regulation *Subject code: 3E6CE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Supplementary Examinations, February 2024

NON TRADITIONAL MACHINING PROCESSES

(Mechanical Engineering)

Maximum Marks: 70 Date: 24.02.2024 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		CO	Bloom Tx
1	Give the importance of non traditional machining process.	CO1	L1
2	List out the demerits of ultrasonic machining process.	CO1	L1
3	Why abrasive jet machining is not recommended to machine ductile materials?	CO2	L1
4	Define ECM process.	CO2	L1
5	List out the desirable properties of a good dielectric fluid.	CO3	L1
6	List out the types of EDM flushing techniques.	CO3	L1
7	Summarize the advantage of EBM over LBM?	CO4	L1
8	State the principle of LBM process.	CO4	L1
9	Brief out the principle of chemical machining process.	CO5	L1
10	Describe the process input parameters of Abrasive flow finishing process.	CO5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)			
11	Compare and contrast on various non traditional machining process on the basis of type of energy employed, material removal rate, transfer media and economical aspects. [10M]	CO1	L2
	OR		
12	Explain the principle of USM and its equipment. Explain the factors, which influence the MRR in USM. [10M]	CO1	L2
13	Elaborate the general arrangement of an Electro chemical machining process and list out the advantages, disadvantages, and applications of ECM process. [10M]	CO2	L3
	OR		
14	Describe the principle and equipment for abrasive Water Jet Machining process in detail with a neat diagram. [10M]	CO2	L2
15	What are the important process parameters that control the material removal rate in EDM? Explain any four factors. [10M]	CO3	L3
	OR		

16	Explain the process of Electrical discharge grinding (EDG) and list any two of its advantages, limitations and applications. [10M]	CO3	L2
17	Discuss about the process capabilities of EBM and the process parameters of EBM in improving machining quality. Explain the effect of increasing the accelerating potential on MRR. [10M]	CO4	L3
	OR		
18	Brief out the principle, construction and working of laser beam machining. How a complex shape product can be machined using LBM process? [10M]	CO4	L3
19	Explain the process of PAM with a neat sketch, with respect to principle, equipment process parameter, advantages, disadvantages and applications. [10M]	CO5	L3
	OR		
20	Briefly explain the role of Chemical machining process in manufacturing industries. [10M]	CO5	L3